Effectiveness of educational intervention in raising knowledge regarding breast cancer among female nurses

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Abstract

Objective: To assess the effect of nursing educational session on nurses' knowledge level related to breast cancer.

Method: The quasi-experimental study was conducted at the Dow University of Health Sciences, and the Dr. Ruth Pfau Civil Hospital, Karachi, from January to July 2018, and comprised nurses from two tertiary care hospitals. A single educational session lasting 90-120-minute was conducted for all the subjects. Knowledge level was tested at baseline and post-intervention using the Comprehensive Breast Cancer Knowledge Test questionnaire. Data was analysed using SPSS 20.

Results: There were 131 nurses with a mean age of 31.05±6.23 years (range: 18-47 years). Overall, 53(40.5%) subjects had General Nursing Diploma; 92(70.2%) were married; 108(82.4%) had no history of breast cancer, 47(35.9%) had 1-4 years of working experience; and 106(80.9%) had completed their graduation from public-sector institutions. The improvement post-intervention was significant in all the three components of knowledge ($p<0.05$).

Conclusion: Nursing educational session was found to have increased nurses' knowledge related to breast cancer.

Keywords: Breast cancer, Risk factors and causation, Educational session, Tertiary care hospital. (JPMA 71: 1959; 2021)

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Introduction

Globally, breast cancer (BC) is the second most common cancer, and fifth primary cause of mortality. As noted by the Global Cancer Observatory (GLOBOCAN), by 2030 estimated BC cases will be 2.4 million in women.[1] According to Inclusive Cancer Statistics 2016, the incidences of BC was 246,660 and mortality was 40,450 in women and it rose up in 2017 to 252,71.[2] A study in Karachi reported BC incidence of 34.8%.[3] According to the World Health Organisation (WHO) in 2017, the incidence of BC had increased in developed countries due to luxurious lifestyle and proper registry system, while in the developing countries the incidence has risen due to cultural trends and late reporting to healthcare providers.[4]

Millions of people all over the world are living with cultural myths about BC due to ambiguous information.[5] International and national BC organisations, like the American Cancer Society and the Korean Breast Cancer Society, have emphasised on BC awareness sessions to all, including the healthcare professionals, non-health care professionals and housewives etc.[6] Furthermore, studies have shown that basic goal of conducting educational session of BC is to create awareness among females for early identification and prevention of BC so that BC morbidity and mortality could be overcome.[7] Pakistan has

a variety of cultures in which women are reluctant to discuss issues of breast with partners, and are more comfortable with female nurses in sharing such problems. Hence, nurses' knowledge must be updated related to BC which might be useful in educating women about BC.[8]

Many descriptive studies have been conducted in countries like Nigeria,[9] Bangladesh,[10] India,[11] Iran[12] and Pakistan,[13] showing that that nurses' knowledge of BC was low regarding signs and symptoms, risk factors and cultural myths. Their knowledge level regarding BC needs to be updated in order to educate women on a mass scale.[9-15] Experimental studies were conducted among nurses in Iraq and Turkey, showing that the knowledge of nurses was low before the awareness session which increased after post-session.[16] To the best of our knowledge, no interventional study has been done in Pakistan which could reveal the effect of an educational session on nurses' knowledge related to BC. The current study was planned to assess the effect of a nursing educational session on nurses' BC knowledge level.

Subjects and Methods

The quasi-experimental study was conducted at the Dow University of Health Sciences (DUHS), and the Dr. Ruth Pfau Civil Hospital, Karachi (CHK), from January to July 2018. After approval from the DUHS ethics review board, the sample size was calculated using the WHO software,[17] while taking the mean total BC knowledge score of primary healthcare nurses before education as 58.51±15.63 and post-intervention as 75.96±9.53[18] and keeping confidence level at 95%, power of the test 80%. To account for possible

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dropouts, the sample size was inflated by 20%. The sample was raised using consecutive sampling technique.

Those included were female nurses registered with the Pakistan Nursing Council (PNC), having minimum qualification of three-year diploma or diploma in midwifery. Those who had recently participated in any BC awareness session were excluded.

After taking informed consent from the subjects, demographic data was noted on a proforma. Further data at baseline was collected using the self-administered modified questionnaire of the Comprehensive Breast Cancer Knowledge Test (CBCKT) with an alpha coefficient of 0.71.[19] In terms of established validity and reliability, Kuder-Richardson 20 (KR-20) test was used to check the reliability of the modified questionnaire. Alpha co-efficient was 0.76 which was obtained after a pilot study of 10% of the same population. The CBCKT questionnaire consisted of 30 items and three domains of knowledge which were facts, risk factors with causation, and myths about BC. These domains, or categories of knowledge, were developed on the basis of score. Facts, risk factors with causation, and myths about BC had 8 items (max score = 8), 8 items (max score = 16) and 14 items (max score = 42) respectively. Participants knowledge was calculated on the basis of percentage0-50% = poor, 51-75% = fair, 76-87% = good, and 87-100% = excellent.

The first phase of the study comprised enrolment and pre-test assessment. In the second phase, an educational session lasting 90-120 minutes was conducted, while in the third phase, a post-test assessment was done after one month using the same questionnaire as was used at the baseline. The teaching session included PowerPoint presentations and a booklet having basic knowledge related to signs and symptoms, risk factors, causes, early assessment, diagnoses and cultural myths of BC.

Data was analysed using SPSS 20. Since the data was not normally distributed, non-parametric tests were used. Wilcoxon test was used to assess the difference in pre- and post-test knowledge. Quantitative variables were expressed as mean and standard deviation, while qualitative variables were expressed as frequencies and percentages. $P<0.05$ was considered statistically significant.

Results

Of the 131 nurses, 104(79.4%) were from the CHK, while 27(20.6%) were from the DUHS. The overall mean age was 31.05±6.23 years (range: 18-47 years). Also, 53(40.5%) subjects had General Nursing Diploma; 92(70.2%) were married; 108(82.4%) had no history of breast cancer, 47(35.9%) had 1-4 years of working experience; and

106(80.9%) had completed their graduation from public-sector institutions (Table 1).

In the pretest, most participants showed poor knowledge in all three components of knowledge (Table 2).

There was significant difference between pretest and posttest scores in all the three components of BC knowledge (Table 3).

Table-1: Socio-demographic Characteristics of study participants.

Variables		n (%)
Highest Education Degree	General Nursing Diploma	53 (40.5)
	Diploma in Midwife	13 (9.9)
	Post-Graduation in Nursing (Post RN)	17 (13)
	Bachelor Nursing (BSN)	48 (36.6)
Marital Status	Unmarried	35 (26.7)
	Married	92 (70.2)
	Divorced	02 (1.5)
	Widow	02 (1.5)
Family history of Breast Cancer	yes	23 (17.6)
	No	108 (82.4)
Ever cared for Breast Cancer	Yes	82 (62.5)
	No	49 (37.4)
Years of experience	1 to 4 years	47 (35.9)
	4 to 8 years	34 (26)
	8 to 12 years	28 (21.4)
	12 to 16 years	22 (16.8)
Graduate Nursing Institution	Public	106 (80.9)
	Private	25 (19.1)

Table-2: Comparison of categories related to breast cancer (BC) knowledge in Pre- and Post-test among the nurses.

Domains	Categories	Pre-test score of BC knowledge n (%)	Post-test score of BC knowledge n (%)
Facts of BC	Poor	116 (88.5)	2 (1.5)
	Fair	10 (7.6)	78 (59.5)
	Good	4 (3.0)	32 (24.4)
	Excellent	1 (0.7)	19 (14.5)
Risk factors and causation of BC	Poor	114(87)	5 (3.8)
	Fair	15((11.4)	85 (64.8)
	Good	2 (1.5)	21 (16.0)
	Excellent	0	20 (15.2)
Myths of BC	Poor	119 (90.8)	3 (2.2)
	Fair	11 (8.3)	47 (35.8)
	Good	1 (0.7)	59 (45.0)
	Excellent	1 (0.76)	22(16.7)

Table-3: Mean difference of knowledge level related to breast cancer (BC) among different components.

Domain	Pre-test score of BC knowledge (Mean±SD)	Post-test score of BC knowledge (Mean±SD)	p-value
Facts of BC	3.7±1.0	6.2±1.0	<0.001
Risk factors and causation of BC	8.5±3.9	18.3±3.5	<0.001
Myths of BC	8.7±4.0	21.7±4.4	<0.001

Discussion

A single educational session in the current study had a constructive effect on nurses' BC knowledge, which is in line with earlier findings.[20] Descriptive studies in Pakistan, India, Iran and Saudi Arabia have shown inadequate knowledge of BC in women because of vague information provided by healthcare providers.[12,21] In contrast, descriptive studies in Turkey and Nepal exhibited that women had adequate knowledge about BC although there was further need of educational programmes for updating their knowledge according to the recommendations of the American Cancer Society.[11,22] These studies suggested that a teaching session is required for improving BC knowledge of nurses.[23]

After attending the educational session, the participants' knowledge improved significantly in the current study. The findings related to the myths domain in the current study is unique. Knowledge related to risk factors and BC causation also improved significantly, which was consistent with studies done in Egypt,[24] Kenya[25] and Colombia[26] and inconsistent with a study done in the United Kingdom.[27] The current study found the lowest difference in the domain of facts, while in studies done in the United Kingdom and Kenya, this was the domain that showed the highest difference[25].

Furthermore, the current study categorised BC knowledge as poor, fair, good and excellent. At baseline, the highest percentage of participants was in the poor category in all the three domains. After the educational session, the knowledge of participants improved in a way that only lower percentage of participants remained in the poor category. This is core evidence of successful educational session. Experimental studies in Turkey, South Africa, India and Iraq did not assess BC knowledge in terms of categories.[11,12] Descriptive studies in India and Malaysia emphasised the need of an awareness session regarding BC to increase the knowledge of the nurses.[28]

Majority of the participants in the current study were diploma holders, married, having no BC history, having 1-4 years of experience, and having completed graduation from public-sector institutions. Similar and contrasting[11,29,30] findings have been reported in earlier studies.

Awareness is fundamental effort which can overcome the risk of having BC by early identification and through changing lifestyles. Also, it is a basic right of women to overcome BC adversity.[31] Studies suggested that BC awareness among nurses should not be neglected as their role in educating women about BC, how to identify BC in early stages, its risk factors, and causation of BC is very important.[8] A study recommended that awareness sessions among nurses must be conducted.[21]

In terms of limitations, nurses improve their knowledge after any academic session, and the current study failed to touch the element of knowledge retention. Another limitation is that conversion of knowledge into practice was not measured.

Conclusion

Nurses attending a single educational session about BC showed a significant improvement in all the three domains of knowledge.

Disclaimer: The text is based on an academic thesis.

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References

1. Akbari A, Khayamzadeh M, Salmanian R, Ghanbari Motlagh A, Roshandel G, Nouri M, et al. National Cancer Mortality-to-Incidence Ratio (MIR) in Iran (2005 - 2014). Int J Cancer Manag 2019 ; 12: e94145

2. Miller KD, Nogueira L, Mariotto AB, Rowland JH, Yabroff KR, Alfano CM, et al. Cancer treatment and survivorship statistics, 2019. CA Cancer J Clin 2019; 69: 363-85.

3. Udani SK, Qureshi SA, Lateef T, Jafri L, Effendi MU, Raheem A, et al. Vitamin D and bone metabolism in breast cancer patients in Karachi, Pakistan. Pak J Pharm Sci 2019; 32(2 (Supplementary)): 875-80.

4. Bawazir AA. Cancer incidence in Yemen from 1997 to 2011: a report from the Aden cancer registry. BMC Cancer 2018; 18: 540.

5. Tapera R, Senabye PK, Mhaka-Mutepfa M, January J, Apau SG. The use of the Health Belief Model (HBM) in determining the factors associated with breast cancer screening among female students in Botswana. Int J Health Promot Educ. 2019; 57: 203-16.

6. Mahmoud MH, Sayed SH, Ibrahim HA, Abd-Elhakam EM. Effect of Health Belief Model-Based Educational Intervention About Breast Cancer on Nursing Students' Knowledge, Health Beliefs and Breast Self-Examination Practice. Int J Nurs Stud. 2018; 3: 77.

7. Alsaraireh A, Darawad MW. Impact of a Breast Cancer Educational Program on Female University Students' Knowledge, Attitudes, and Practices. J Cancer Educ 2019; 34: 315-22.

8. Weston C, Akinlotan M, Lichorad A, McClellan D, Helduser J, Ojinnaka C, et al. The impact of interprofessional education on family nurse practitioner students' and family medicine residents' knowledge and confidence in screening for breast and cervical cancer. J Am Assoc Nurse Pract 2018; 30: 511-8.

9. Khokhar A. Breast Cancer Literacy amongst Office Going Women of Delhi. Clin Oncol 2018; 3: 1430.

10. Steiness HS, Villegas-Gold M, Parveen H, Ferdousy T, Ginsburg O. Barriers to care for women with breast cancer symptoms in rural Bangladesh. Health Care Women Int 2018; 39: 536-54.

11. Bhandari PM, Thapa K, Dhakal S, Bhochhibhoya S, Deuja R, Acharya P, et al. Breast cancer literacy among higher secondary students: results from a cross-sectional study in Western Nepal. BMC Cancer 2016; 16: 119

12. Al-Zalabani AH, Alharbi KD, Fallatah NI, Alqabshawi RI, Al-Zalabani AA, Alghamdi SM. Breast cancer knowledge and screening practice and barriers among women in Madinah, Saudi Arabia. J Cancer Educ 2018; 33: 201-7.

13. Masoudiyekta L, Rezaei- Bayatiyani H, Dashtbozorgi B, Gheibizadeh M, Malehi AS, Moradi M. Effect of education based on health belief model on the behavior of breast cancer screening in women. Asia Pac J Oncol Nurs 2018; 5: 114-20.

14. Sharma R, Pannikottu J, Xu Y, Tung M, Nothelle S, Oakes AH, et al. Factors influencing overuse of breast cancer screening: A systematic review. J Womens Health (Larchmt) 2018; 27: 1142-51.

15. Smith SG, Osborne K, Tring S, George H, Power E. Evaluating the impact of a community-based cancer awareness roadshow on awareness, attitudes and behaviors. Prev Med 2016; 87: 138-43.

16. Alsaraireh A, Darawad MW. Breast cancer awareness, attitude and practices among female university students: A descriptive study from Jordan. Health Care Women Int 2018; 39: 571-83.

17. Lwanga SK, Lemeshow S. World Health Organization. Sample Size Determination in Health Studies: A Practical Manual; 1991.

18. Oluwatosin O. Primary health care nurses' knowledge practice and client teaching of early detection measures of breast cancer in Ibadan. BMC Nurs 2012; 11: 22.

19. Stager JL. The comprehensive Breast Cancer Knowledge Test: validity and reliability. J Adv Nurs 1993; 18: 1133-40

20. Ahmed A, Zahid I, Ladiwala ZF, Sheikh R, Memon AS. Breast self-examination awareness and practices in young women in developing countries: A survey of female students in Karachi, Pakistan. J Educ Health Promot 2018; 7: 90.

21. Rasool S, Iqbal M, Siddiqui A, Ahsan R, Mukhtar S, Naqvi S. Knowledge, Attitude, Practice towards Breast Cancer and Breast Self-examination among Female Undergraduate Students in Karachi, Pakistan. J Adv Med Med Res. 2019; 29: 1-11.

22. Aziz KF, Maqsud SS. Effectiveness of Health Teaching on Women's Knowledge and Skills Regarding Breast Self-Examination in Primary Health Centers in Erbil City/Iraq. EJNM 2019; 2: 78-83.

23. Kıssal A, Kartal B. Effects of Health Belief Model-Based Education on Health Beliefs and Breast Self-Examination in Nursing Students. Asia Pac J Oncol Nurs 2019; 6: 403-10.

24. Bibi A, Khalid MA. Death anxiety, perceived social support, and demographic correlates of patients with breast cancer in Pakistan. Death Stud 2020; 44: 787-92.

25. Kisuya J, Wachira J, Busakhala N, Naanyu V, Chite AF, Omenge O, et al. Impact of an educational intervention on breast cancer knowledge in western Kenya. Health Educ Res 2015; 30: 786-96

26. Masso-Calderón AM, Meneses-Echávez JF, Correa-Bautista JE, Tovar-Cifuentes A, Alba-Ramírez PA, Charry-Ángel CE. Effects of an educational intervention on breast self-examination, breast cancer prevention-related knowledge, and healthy lifestyles in scholars from a low-income area in Bogota, Colombia. J Canc Educ 2018; 33: 673-9

27. Tyagi NK, Dhesy-Thind S. Clinical practice guidelines in breast cancer. Curr Oncol 2018; 25(Suppl 1): S151-60.

28. Rao RR, Acharya RP, Bajpai P, Abbas W, Khetrapal R. Cancer awareness amongst nurses in a tertiary care hospital in North Delhi, India. Indian J Med Paediatr Oncol 2019; 40: 89.

29. El-Shemy MB, Essa HA. Effect of Health Education Intervention Program about Breast Self-Examination (BSE) among Female Nursing Students In Faculty of Nursing, Tanta University, Egypt.

30. McWilliams L, Bellhouse S, Yorke J, Cowan R, Heaven CM, French DP. The acceptability and feasibility of lay-health led interventions for the prevention and early detection of cancer. Psychooncology 2018; 27: 1291-7.

31. Rebuan HB, Othman HB, Hassan NM, Moe M, Mohamad NQ. Breast cancer knowledge among nursing students in public University. The Malaysian Journal of Nursing 2018; 10: 3-7.